Ship building considering ship recycling

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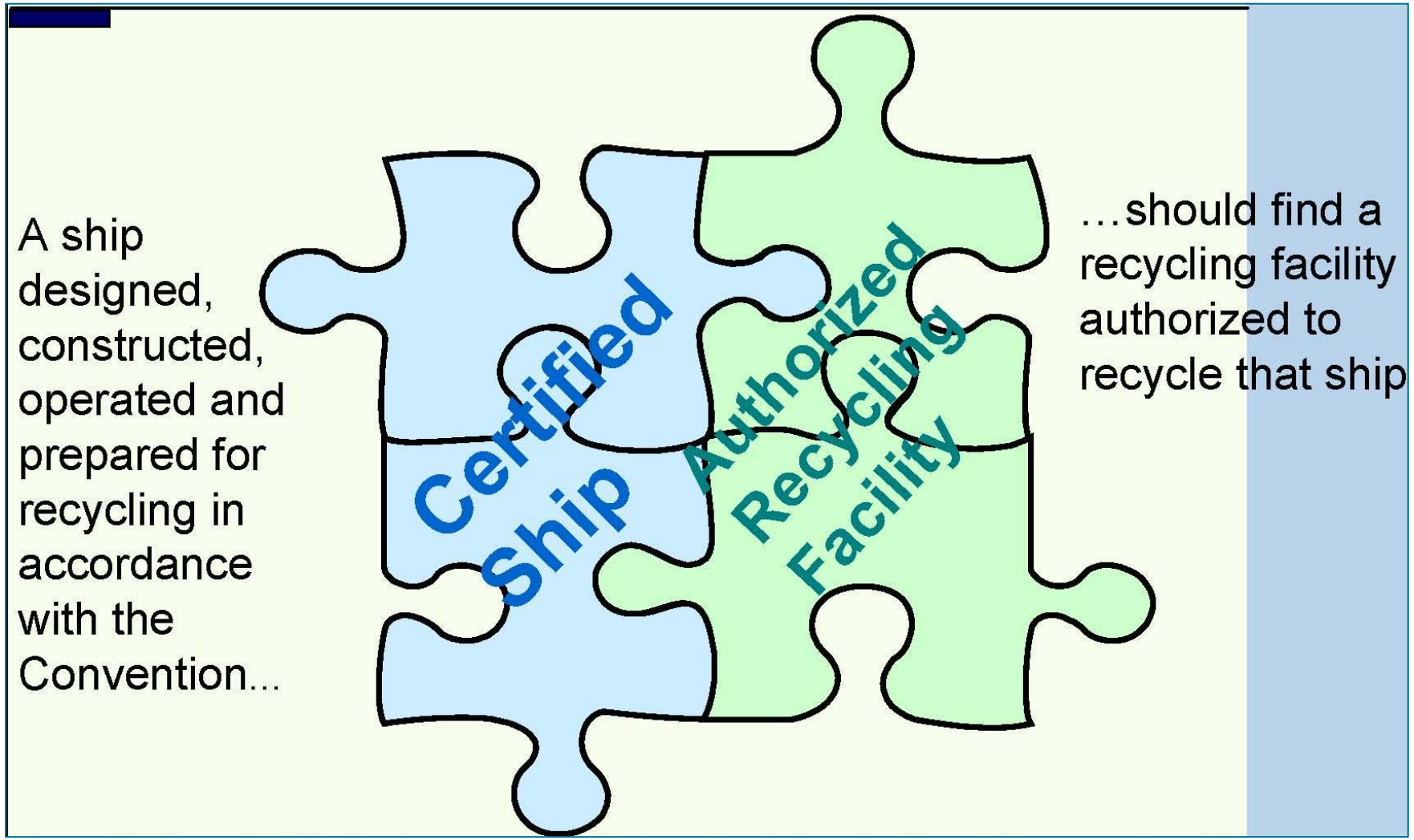
My presentation today

Ship building in relation to

- The entry-into-force of the Hong Kong Convention
- Life cycle assessments
- Recycling

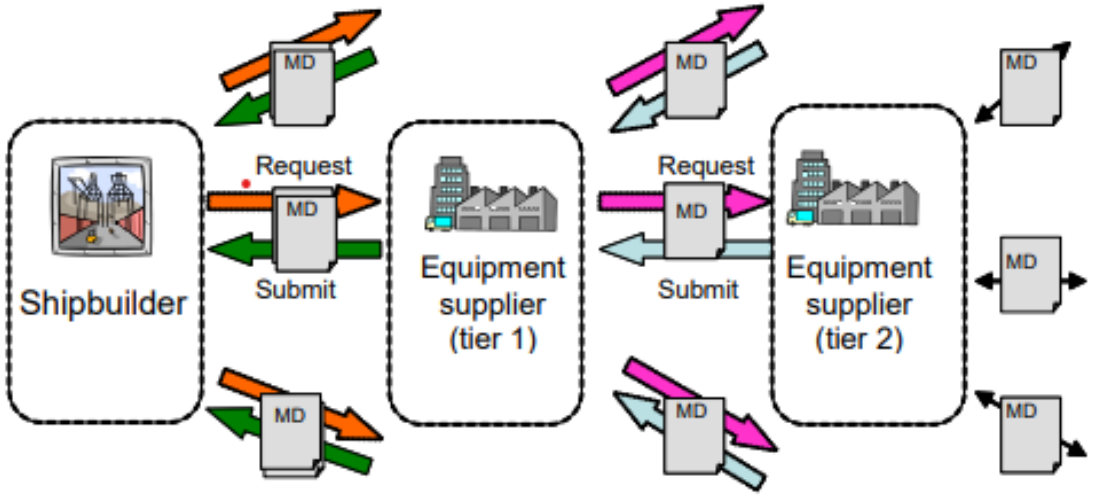
Fundamentals of the HKC



The intention of the HKC

… to promote the substitution of hazardous materials in the construction and maintenance of ships by less hazardous, or preferably, non-hazardous materials, without compromising the ships' safety, the safety and health of seafarers and the ships' operational efficiency.

At the design and construction stage



- Prepare Inventory of Hazardous Materials (IHM)

  Prohibited to use
  - Asbestos
  - Ozone-depleting substances
  - Polychlorinated biphenyls (PCB)
  - Anti-fouling compounds and systems
  - *EU SRR:* Perfluorooctane sulfonic acid (PFOS)

  Other materials allowed under specified threshold values

Inventory of hazardous materials (IHM)

App. 30.000 ships already have an IHM

Newbuilding's with a tonnage on and above 500 GT shall be equipped with an IHM after 26 June 2025

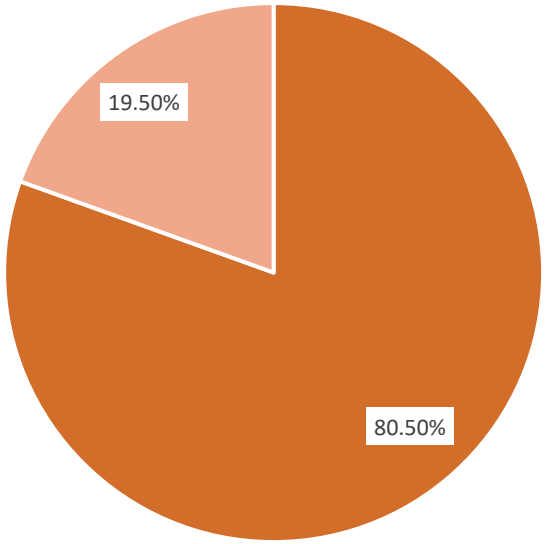
App. 23000 existing ships will have to be equipped with an IHM between 2025 and 2030

- Existing ships shall comply as far as practicable – today IHM's are often inaccurate
- Resolution MEPC.269(68), 2015 Guidelines for the development of the inventory of hazardous materials (IHM)

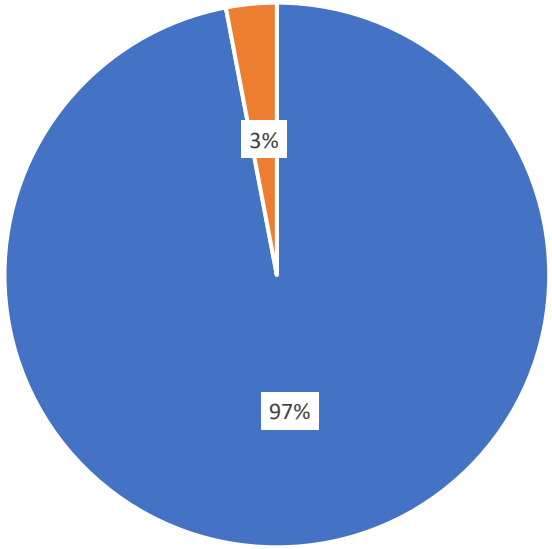
Life cycle assessment (LCA) is receiving more and more attention – Fuels contra steel

Example: CO_2 equivalent emissions calculated for a RoRo ship with long operational life

Methanol/Production and maintenance*



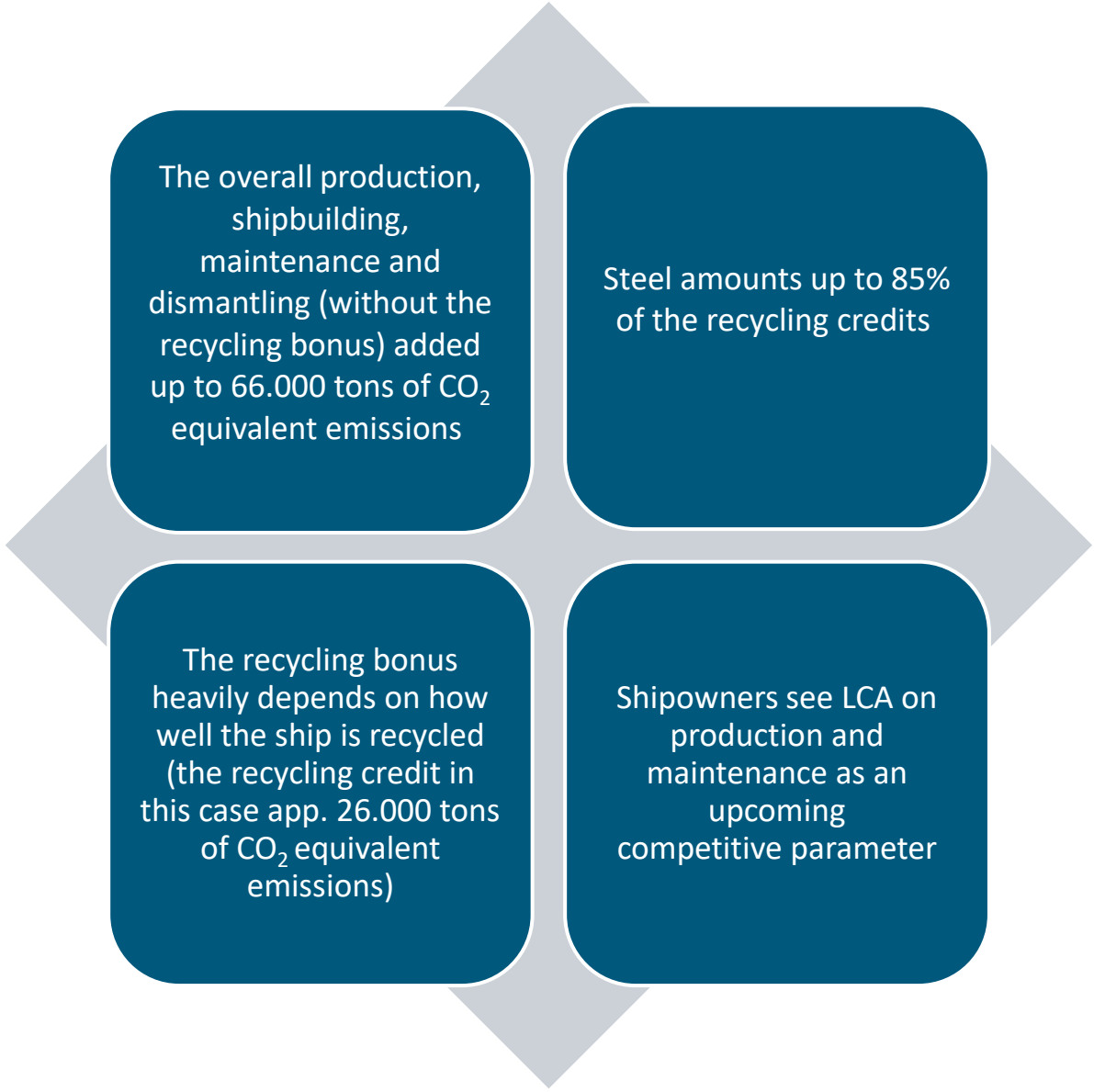
HFO/Production and maintanace



Steel stands for about 70% of production and maintenance emissions

*Methanol calculated with 10% MGO/MDO

Emissions


The overall production, shipbuilding, maintenance and dismantling (without the recycling bonus) added up to 66.000 tons of CO_2 equivalent emissions
Steel amounts up to 85% of the recycling credits
The recycling bonus heavily depends on how well the ship is recycled (the recycling credit in this case app. 26.000 tons of CO_2 equivalent emissions)
Shipowners see LCA on production and maintenance as an upcoming competitive parameter

Lower lifetime emissions by choosing low-emission steel

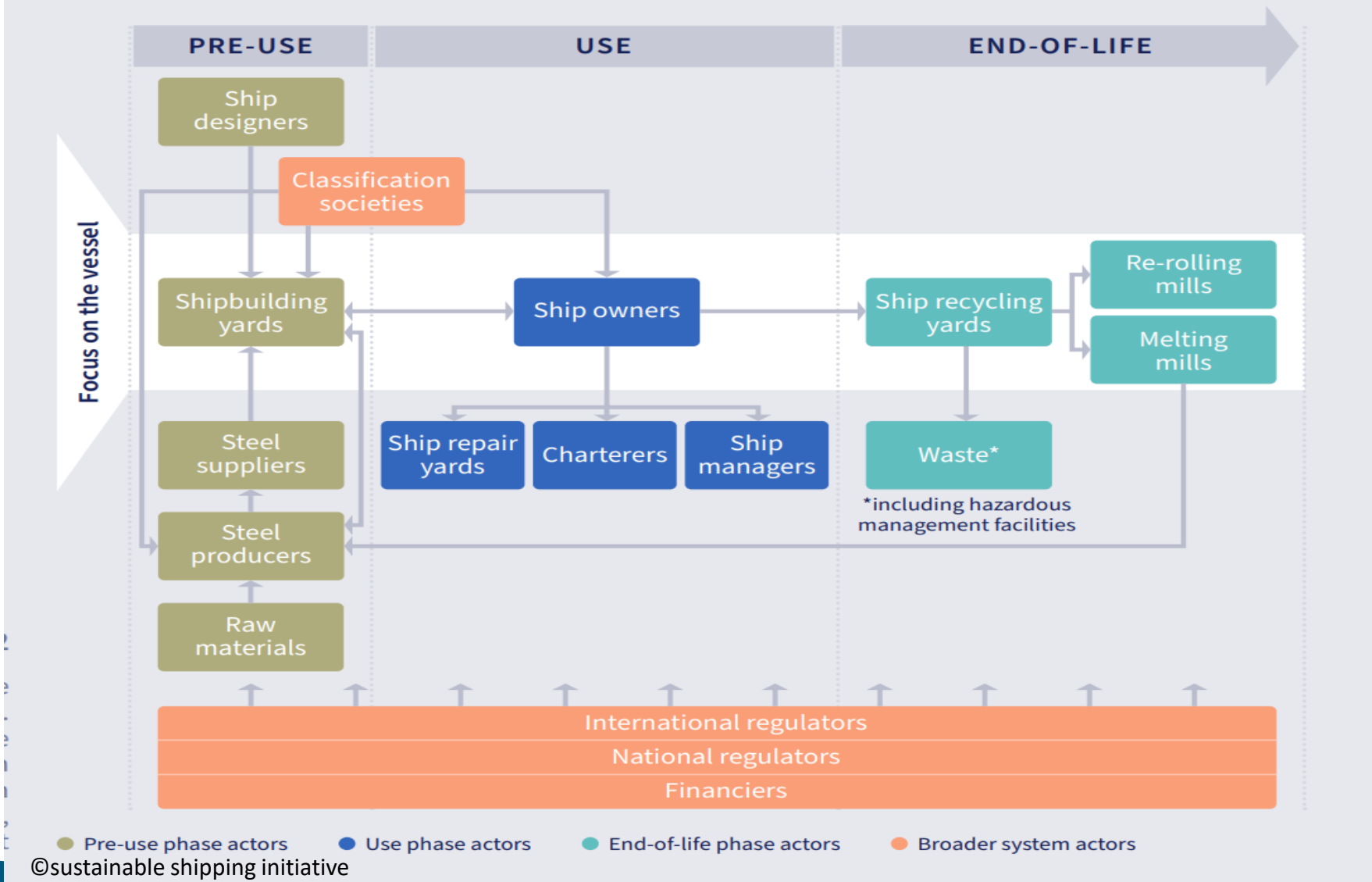
By using low emissions steel for new buildings, the overall environmental impact will be lowered

Several organizations and initiatives are striving for net-zero steel production

SteelZero was introduced at last Tripartite

Important to create system around low emissions steel using circularity around ship recycling and ship building

The steel recycling system



Steel from recycled ships scrap represents good quality steel for recycling

Conclusions

Ships should be built in accordance with the HKC controlling the use of HM

Steel should be considered at the design and construction phase to lower life cycle GHG emissions of the ship

In the long term there is a need to

Develop standard and trustworthy certification scheme of low carbon steel (“green steel”)

Include “green steel” and other valuable metals in an inventory of materials

Consider amending the HKC and/or its guidelines focussing on circularity

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